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[38 FR 27386, Oct. 3, 1973]

§ 23.17 Frequency measurement.

Each station shall provide for the measurement of all frequencies assigned thereto, and establish a procedure for checking them regularly. These measurements shall be made by means independent of the frequency control of the transmitter and shall be of accuracy sufficient to detect deviation from the assigned frequency within one-half of the allowed tolerance. A record shall be kept of the results and dates of all frequency measurements.

[38 FR 22480, Aug. 21, 1973]

§ 23.18 Authorization of power.

(a) *Authorized power.* Power, when designated in the respective station license for a particular transmitter or transmitters, is peak envelope power for transmitters having full, unkeyed carrier, single sideband or independent sideband emissions, and mean power for transmitters having other emissions, unless specifically expressed otherwise. Designation of effective radiated power may appear in the station license in addition to designation of power for a transmitter or transmitters, when deemed necessary by the Commission.

(b) *Use of minimum power.* In the interest of avoiding interference to other operations, all stations shall radiate only as much power as is necessary to ensure a satisfactory service.

[38 FR 22480, Aug. 21, 1973]

§ 23.19 Use of directional antennas.

Insofar as is practicable, directional antennas, of type consistent with the current state of art, shall be used on all circuits for both transmitting and receiving.

[38 FR 22480, Aug. 21, 1973]

§ 23.20 Assignment of frequencies.

(a) Only those frequencies which are in accordance with §2.106 of this chapter may be authorized for use by stations in the Fixed Public and Fixed Public Press Services. Selection of specific frequencies within such bands shall be made by the applicants therefor. After an application has been filed with the Commission for a particular frequency, its availability for assignment as requested will be determined by a study of the probabilities of interference to and from existing services assigned on the same or adjacent frequencies and, if necessary, by coordination with other agencies utilizing frequencies in these ranges. The applicant will be notified of the results of such study and coordination. All new assignments of frequencies may be made subject to certain conditions as may be required to minimize the possibility of harmful interference to existing services.

(b) In order to minimize possible harmful interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, West Virginia, any applicant for a station authorization other than mobile, temporary base, temporary fixed, Personal Radio, Civil Air Patrol, or Amateur seeking a station license for a new station, a construction permit to construct a new station or to modify an existing station license in a manner which would change either the frequency, power, antenna height or directivity, or location of such a station within the area bounded by 39°15′ N. on the north, 78°30′ W. on the east, 37°30′ N. on the south and 80°30′ W. on the west shall, at the time of filing such application with the Commission, simultaneously notify the Director, National Radio Astronomy Observatory, P. O. Box No. 2, Green Bank, West Virginia, 24944, in writing, of the technical particulars of the proposed station. Such notification shall include the geographical coordinates of the antenna, antenna height, antenna directivity if any, proposed frequency, type of emission, and power. In addition, the applicant shall indicate in his application to the Commission the date notification was made to the Observatory. After receipt of such applications, the Commission will allow a period of twenty (20) days for comments or objections in response to the notifications indicated. If an objection to the proposed operation

is received during the twenty day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate.

(c) [Reserved]

(d) Protection for Table Mountain Radio Receiving Zone, Boulder County, Colorado: Applicants for a station authorization to operate in the vicinity of Boulder County, Colorado under this part are advised to give due consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from harmful interference. These are the research laboratories of the Department of Commerce, Boulder County, Colorado. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that the field strengths of any radiated signals (excluding reflected signals) received on this 728 hectare site (in the vicinity of coordinates 40°07′50″ N Latitude, 105°14′40″ W Longitude) resulting from new assignments (other than mobile stations) or from the modification or relocation of existing facilities do not exceed the following values:

Frequency range	Field strength (mV/m) in authorized bandwidth of service	Power flux density [1] (dBW/m^2) in authorized bandwidth of service
Below 540 kHz	10	65.8
540 to 1600 Khz	20	59.8
1.6 to 470 MHz	10	[2] 65.8
470 to 890 MHz	30	[2] 56.2
Above 890 MHz	1	[2] 85.8

[1] Equivalent values of power flux density are calculated assuming free space characteristic impedance of $376.7=120\pi$ ohms.

[2] Space stations shall conform to the power flux density limits at the earth's surface specified in appropriate parts of the FCC rules, but in no case should exceed the above levels in any 4 kHz band for all angles of arrival.

(1) Advance consultation is recommended particularly for those applicants who have no reliable data which indicates whether the field strength or power flux density figures in the above table would be exceeded by their proposed radio facilities (except mobile stations). In such instances, the following is a suggested guide for determining whether coordination is recommended:

(i) All stations within 2.4 kilometers;

(ii) Stations within 4.8 kilometers with 50 watts or more effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone;

(iii) Stations within 16.1 kilometers with 1 kW or more ERP in the primary plane of polarization in the azimuthal direction of Table Mountain Receiving Zone;

(iv) Stations within 80.5 kilometers with 25 kW or more ERP in the primary plane or polarization in the azimuthal direction of Table Mountain Receiving Zone.

(2) Applicants concerned are urged to communicate with the Radio Frequency Management Coordinator, Department of Commerce, Research Support Services, NOAA R/E5X2, Boulder Laboratories, Boulder, CO 80303; telephone (303) 497–6548, in advance of filing their applications with the Commission.

(3) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Department of Commerce or proceedings to modify any authorization which may be granted which, in fact, delivers a signal at the site in excess of the field strength specified herein.

(e) Protection for Federal Communications Commission monitoring stations:

(1) Applicants in the vicinity of an FCC monitoring station for a radio station authorization to operate new transmitting facilities or changed transmitting facilities which would increase the field strength produced over the monitoring station over that previously authorized are advised to give consideration, prior to filing applications, to the possible need to protect the FCC stations from harmful interference. Geographical coordinates of the facilities which require protection are listed in §0.121(c) of the Commission's Rules. Applications for stations (except mobile stations) which will produce on any frequency a direct wave

fundamental field strength of *greater than 10 mV/m* in the authorized bandwidth of service (−65.8 dBW/m² power flux density assuming a free space characteristic impedance of 120 ohms) at the referenced coordinates, may be examined to determine extent of possible interference. Depending on the theoretical field strength value and existing root-sum-square or other ambient radio field signal levels at the indicated coordinates, a clause protecting the monitoring station may be added to the station authorization.

(2) In the event that calculated value of expected field exceeds 10 mV/m (−65.8 dBW/m²) at the reference coordinates, or if there is any question whether field strength levels might exceed the threshold value, advance consultation with the FCC to discuss any protection necessary should be considered. Prospective applicants may communicate with: Chief, Compliance and Information Bureau, Federal Communications Commission, Washington, DC 20554, Telephone (202) 632–6980.

(3) Advance consultation is suggested particularly for those applicants who have no reliable data which indicates whether the field strength or power flux density figure indicated would be exceeded by their proposed radio facilities (except mobile stations). In such instances, the following is a suggested guide for determining whether an applicant should coordinate:

(i) All stations within 2.4 kilometers (1.5 statute miles);

(ii) Stations within 4.8 kilometers (3 statute miles) with 50 watts or more average effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Monitoring Stations.

(iii) Stations within 16 kilometers (10 statute miles) with 1 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;

(iv) Stations within 80 kilometers (50 statute miles) with 25 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;

(4) Advance coordination for stations operating above 1000 MHz is recommended only where the proposed station is in the vicinity of a monitoring station designated as a satellite monitoring facility in §0.121(c) of the Commission's Rules and also meets the criteria outlined in paragraphs (e)(2) and (3) of this section.

(5) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Federal Communications Commission or modification of any authorization which will cause harmful interference.

[28 FR 13032, Dec. 5, 1963, as amended at 42 FR 8329, Feb. 9, 1977; 42 FR 27894, June 1, 1977; 44 FR 77167, Dec. 31, 1979; 50 FR 39002, Sept. 26, 1985; 58 FR 44904, Aug. 25, 1993; 61 FR 8477, Mar. 5, 1996]

§ 23.21 Communications by international control stations.

Stations in the international fixed public control service are authorized to communicate between transmitting stations, receiving stations, message centers or control points operating in the international fixed public radiocommunication services for the purpose of handling service messages or international traffic between these points: *Provided*, That only traffic originating in or destined to points outside the contiguous states may be handled. Frequencies in bands designated for international control stations in Part 2 of this chapter may be assigned to these stations.

[38 FR 22480, Aug. 21, 1973]

§ 23.23 Use of frequencies for radiotelegraph communication within the continental United States.

Licensees of point-to-point radiotelegraph stations may use any frequency authorized in a station license for communication between designated points within the 48 contiguous states and the District of Columbia upon the express condition that the use of any frequency above 5000 kHz shall be subject to the limitation that no interference shall be caused to the international service, or to service with Alaska or Hawaii; and in the event such interference is caused the licensee shall immediately discontinue the use of the frequency or frequencies producing such interference and operation